CLAIMS:

1. A data carrier comprising:

a hologram storing data to reproduce an image of a portion of a human body characteristic of an individual; and

a second data bearing device; and

wherein data stored by said second data bearing device is verifiable using data stored in said hologram.

2. A data carrier as claimed in claim 1 wherein said data stored by said second data bearing device comprises first and second data, said first data being for verification of one of said first data and said image with the other, and second data being verified by said verification.

3. A data carrier as claimed in claim 1 or 2 wherein said hologram stores additional data, and wherein said data stored by said second data bearing device comprises third and fourth data, said third data being for verification of one of said additional data and said third data with the other, and fourth data being verified by said verification.

4. A data carrier as claimed in claim 1, 2 or 3 wherein said image comprises a substantially two-dimensional image.

5. A data carrier as claimed in any preceding claim wherein said hologram comprises a volume reflection hologram.

6. A data carrier as claimed in any preceding claim wherein said second data bearing device comprises an integrated circuit memory device.

7. A method of verifying data stored on a data carrier, the data carrier comprising

a hologram storing data to reproduce an image of a portion of a human body characteristic of an individual; and

a second data bearing device; and

wherein data stored by said second data bearing device is verifiable using data stored in said hologram, the method comprising:

reproducing said characteristic image;

comparing said reproduced image with a view of an individual to verify data stored in said hologram;

verifying, responsive to a result of said comparison, data stored by said second data bearing device using data stored in said hologram.

8. Apparatus for capturing and recording an image such as a biometric image as a hologram for a data carrier, the apparatus comprising:

a biometric image capture device;

means for electronically reproducing said captured image as a reproduced image; and

means for recording said reproduced image in a holographic recording material for developing into a hologram.

9. Apparatus as claimed in claim 8 wherein said reproduced image is substantially planar.

10. Apparatus as claimed in claim 9 comprising means to record for said hologram a first view comprising said reproduced image and a second view comprising additional data.

11. Apparatus as claimed in claim 9 or 10 wherein said hologram comprises a volume reflection hologram or volume transmission hologram.

12. Apparatus as claimed in any one of claims 8 to 11 further comprising means for storing said captured image in a data store for comparison with said recorded image.

13. A data carrier comprising:

a hologram storing data to reproduce an image of a graphic associated with a product; and

a second data bearing device storing data unique to the data carrier.

14. A data carrier as claimed in claim 13 wherein said data carrier is substantially planar and wherein said graphic image is spaced away from the plane of said data carrier.

15. A data carrier as claimed in claim 13 or 14 wherein said second data bearing device comprises a unique, machine-readable code.

16. A data carrier as claimed in claim 13, 14 or 15 wherein said data carrier is substantially planar and wherein said second data bearing device defines an image spaced away from the plane of said data carrier and comprising said unique data.

17. Recording apparatus for recording a hologram for a data carrier, in particular the data carrier of claim 1 or 13, the apparatus comprising a spatial light modulator (SLM) in mechanical contact with a holographic recording medium.

18. Recording apparatus for recording a hologram for a data carrier, in particular the data carrier of claim 1 or 13, the apparatus comprising a spatial light modulator (SLM), a holographic recording medium, and an optically transparent spacer between the holographic recording medium and the SLM.

19. Recording apparatus as claimed in claim 18 wherein said spacer has a thickness of less than 3cm, preferably less than 1cm.

20. Recording apparatus as claimed in claim 18 or 19 further comprising a laser to record said hologram.

21. Recording apparatus as claimed in claim 20 wherein said spacer has a thickness less than a coherence length of said laser.

21. Recording apparatus as claimed in claim 20 or 21 further comprising a diffuser, and wherein said laser is configured to illuminate said SLM through said diffuser.

22. Apparatus for capturing and recording an image, the apparatus comprising:

an image capture device;

a spatial light modulator to reproduce a substantially two-dimensional version of the captured image; and

a holographic writer to write the reproduced image into a hologram.

23. Apparatus as claimed in claim 22 wherein said image is written as a reflection hologram.

24. Apparatus as claimed in claim 22 or 23 wherein said spatial light modulator is in close proximity to or adjacent said holographic recording medium.

25. Apparatus as claimed in claim 22, 23 or 24 further comprising a diffuser in an object or reference beam of said holographic writer to create a hologram with a diffused or speckled appearance.

26. A method for creating a data carrier incorporating a hologram and a second data bearing device, the method comprising:

capturing biometric information and using this to create an image;

recording the image into a hologram; and

recording data derived from or verifiable using data stored in the hologram on said second data bearing device.

27. A method as claimed in claim 26 wherein said image is substantially two-dimensional.

28. A method as claimed in claim 26 or 27 wherein said second data bearing device comprises a semi-conductor memory device.

29. A method as claimed in claim 26, 27 or 28 wherein said memory device stores a a version of the image and cryptographic data which is also written into the hologram.

30. A method as claimed in claim 26, 27, 28 or 29 wherein said data is stored as a reflective hologram.

31. A method as claimed in claim 28, 29 or 30 wherein said memory device and said hologram are bonded to a common substrate or encapsulated in a single document or card.

32. A data carrier carrying processor control code to implement the method of any one of claims 26 to 31.

33. Apparatus for verifying data stored on a data carrier, the data carrier comprising a hologram storing data to reproduce an image of a portion of a human body characteristic of an individual and a second data bearing device, and wherein data stored by said second data bearing device is verifiable using data stored in said hologram, the apparatus comprising:

means to reproduce said characteristic image;

means to compare said reproduced image with a view of an individual to verify data stored in said hologram;

means to verify, responsive to a result of said comparison, data stored by said second data bearing device using data stored in said hologram.

34. Apparatus for reading a data carrier carrying a hologram, the apparatus comprising:

at least one light source for illuminating the hologram, said at least one light source being configured to deliver light at a specific angle to the surface of said hologram to reconstruct a holographic image in an image plane spaced away from a plane of said data carrier; and

an imaging device focussed in the plane of said holographic image, said imaging device having a sufficiently small depth of field as to substantially visually separate said plane of said holographic image from said plane of said data carrier.

35. A data carrier, method or apparatus as claimed in any preceding claim wherein said hologram is configured to reconstruct in a plurality of component colours.

36. A data carrier, method or apparatus as claimed in claim 35 wherein said plurality of component colours comprise false colours configured to aid identification.

37. A data carrier, method or apparatus as claimed in claim 35 or 36 wherein at least one of said component colours is substantially invisible to the human eye.